



# **Manufacturing in Virginia**

## **Overview**



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## Overall Assessment

- Manufacturing is Virginia’s largest basic industry with 388,800 employees in 6,908 establishments and with finished product shipments worth more than \$92 billion annually.
- Manufacturing’s share of nonagricultural employment has dropped from 28.6 percent in 1949 to 11.1 percent in 2000 primarily due to the faster employment growth of nonmanufacturing industries relative to manufacturing.
- Manufacturing employment in Virginia peaked at 432,500 in September 1989. As of August 2001 it has lost 57,000 jobs -- 35,000 in textiles and apparel.
- Since 1989 manufacturers have been producing more with the same or fewer workers.
- Adjusted for inflation, the value added per manufacturing employee increased from \$50,200 in 1985 to \$70,100 in 1997, a gain of 40 percent.

## Employment - Ten Largest Manufacturing Industries, 2000

Virginia		
Industry	Employment	% of total
Manufacturing	388,800	100.0
1. Transportation	39,800	10.2
2. Food and kindred products	38,500	9.9
3. Printing and publishing	38,000	9.8
4. Industrial machinery	28,700	7.4
5. Lumber and wood products	27,800	7.2
6. Electrical and electronic equipment	27,700	7.1
7. Textile mill products	26,300	6.8
8. Rubber and misc. plastics	24,500	6.3
9. Furniture and fixtures	21,900	5.6
10. Chemical and allied products	20,400	5.2
Top Ten Total	293,600	75.5

Source: U.S. Department of Labor, Bureau of Labor Statistics.

- Virginia’s 10 largest manufacturing industries account for almost 76 percent of manufacturing employment
- In 1949 the three largest manufacturing industries were textiles, chemicals, and lumber and wood products. They now rank seventh, tenth, and fifth, respectively.

## Employment Growth - Largest Job Growth Industries, 1969-2000

Virginia		
Industry	Employment Increase	Percent Increase
Manufacturing	17,800	4.8
1. Printing and publishing	24,100	173.4
2. Industrial machinery	19,000	195.9
3. Transportation equipment	10,700	36.8
4. Instruments	9,400	408.7
5. Fabricated metal products	5,300	44.9
6. Electrical and electronic equipment	4,900	21.5
7. Lumber and wood products	4,200	17.8
8. Paper and allied products	3,100	22.1
9. Food and kindred products	2,300	6.4
10. Stone, clay, and glass products	2,000	18.09
Top Ten Total	102,800	48.7

Source: U.S. Department of Labor, Bureau of Labor Statistics.

- Since 1949 printing and publishing has added 31,400 jobs – more than any other industry in Virginia; 77 percent of these jobs were added after 1969.
- Industrial machinery added almost 25,000 jobs since 1958; 76 percent of these jobs were added after 1969.
- Electrical and electronic equipment added 19,800 jobs from 1969 to 1985; since 1985 it has lost 14,900 jobs.
- Transportation equipment added 15,400 jobs from 1969 to 1988; since 1988 it has lost 4,700 jobs.

## Employment Losses - Largest Job Loss Industries, 1969-2000

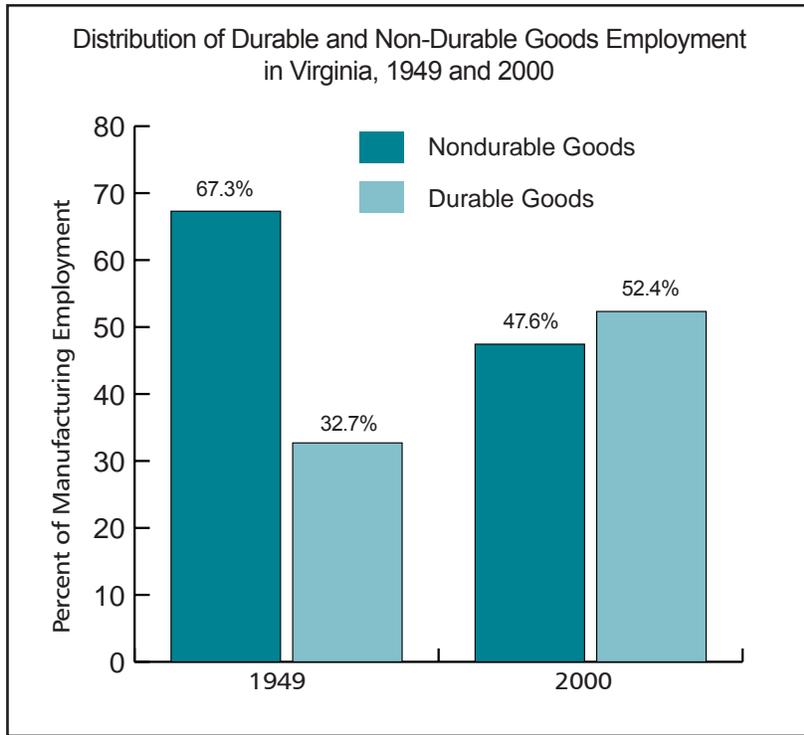
Virginia		
Industry	Employment Loss	Percent Decline
Manufacturing		
1. Chemicals and allied products	-26,600	-56.6
2. Apparel and other textile products	-26,500	-71.8
3. Textile mill products	-17,800	-40.4
4. Tobacco products	-6,200	-41.9
5. Furniture and fixtures	-3,200	-12.7
Total	-80,300	-47.8

Source: U.S. Department of Labor, Bureau of Labor Statistics.

- From 1949 to 1969 apparel added 22,100 jobs; from 1969 to 2000 it lost 26,500 jobs.
- Since 1969 apparel and textiles have lost almost 44,300 jobs.

## Employment Trends

### Durable-Non-durable Goods Employment Distribution



- In 1949 less than a third of all manufacturing employees in Virginia were employed in durable goods; in 2000 more than half were employed in durable goods.
- The shift to durable goods manufacturing was primarily due to the decline of textiles, apparel, chemicals, and tobacco manufactures and the growth of industrial machinery, electrical and electronic equipment, and transportation equipment.

Source: U.S. Department of Labor, Bureau of Labor Statistics.

### Absolute Manufacturing Employment Growth

	Virginia	U.S.
	Absolute Employment Change	Absolute Employment Change
1949-2000	167,200	3,996,000
1949-1969	149,400	5,726,000
1969-2000	17,800	-1,730,000

Source: U.S. Department of Labor, Bureau of Labor Statistics.

- Eighty-nine percent of Virginia's manufacturing job growth since 1949 occurred from 1949 to 1969.

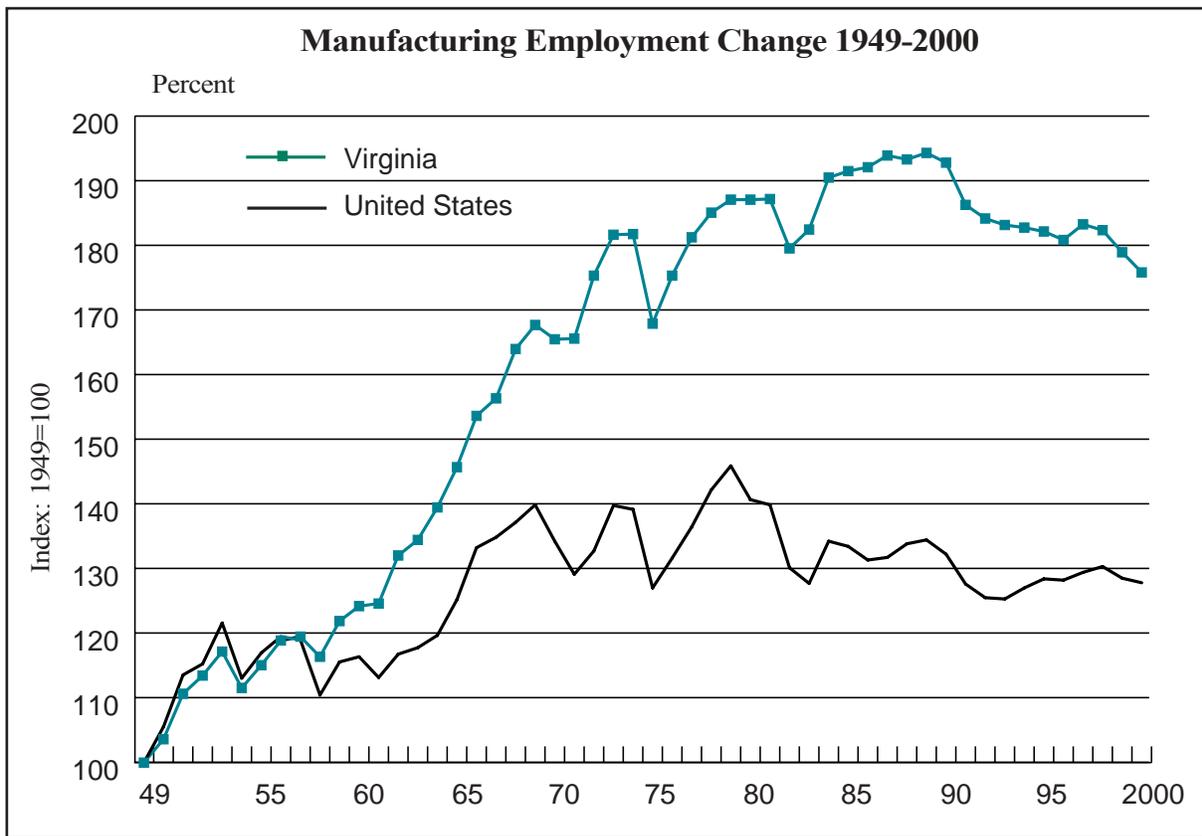
Relative Employment Growth

Virginia Annual Average Growth Rates			
	Annual Growth Rate, 1949-2000	Annual Growth Rate, 1949-69	Annual Growth Rate, 1969-2000
Nonagricultural Employment	3.0%	3.1%	2.9%
Manufacturing	1.1%	2.6%	0.2%
Nondurable Goods	0.4%	2.0%	-0.6%
Durable Goods	2.0%	3.7%	1.0%

Source: U.S. Department of Labor, Bureau of Labor Statistics.

- Manufacturing’s compound annual job growth rate was 13 times greater from 1949 to 1969 than from 1969 to 2000.
- Since 1969 the durable goods compound annual job growth rate has been 5 times greater than the comparable rate for manufacturing.

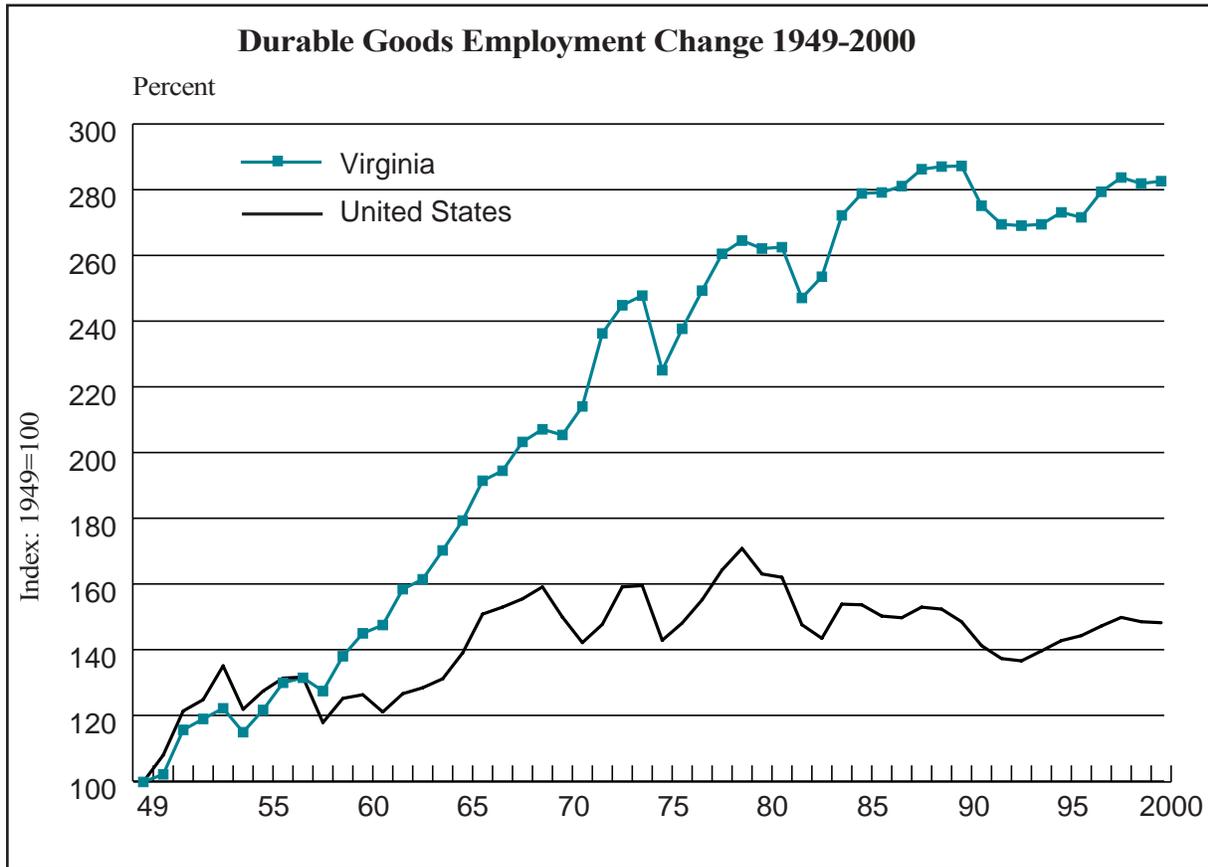
Long-Term Employment Trends



Source: U.S. Department of Labor, Bureau of Labor Statistics.

- Manufacturing employment growth in Virginia has gone through three distinct phases:
  - ▲ 1949-1974: Manufacturing in Virginia experienced its most rapid growth - growing 2.4 percent annually.
  - ▲ 1974-1989: Manufacturing annual employment growth slowed considerably to 0.4 percent.
  - ▲ 1989-2000: Manufacturing employment **declined** 0.9 percent annually.

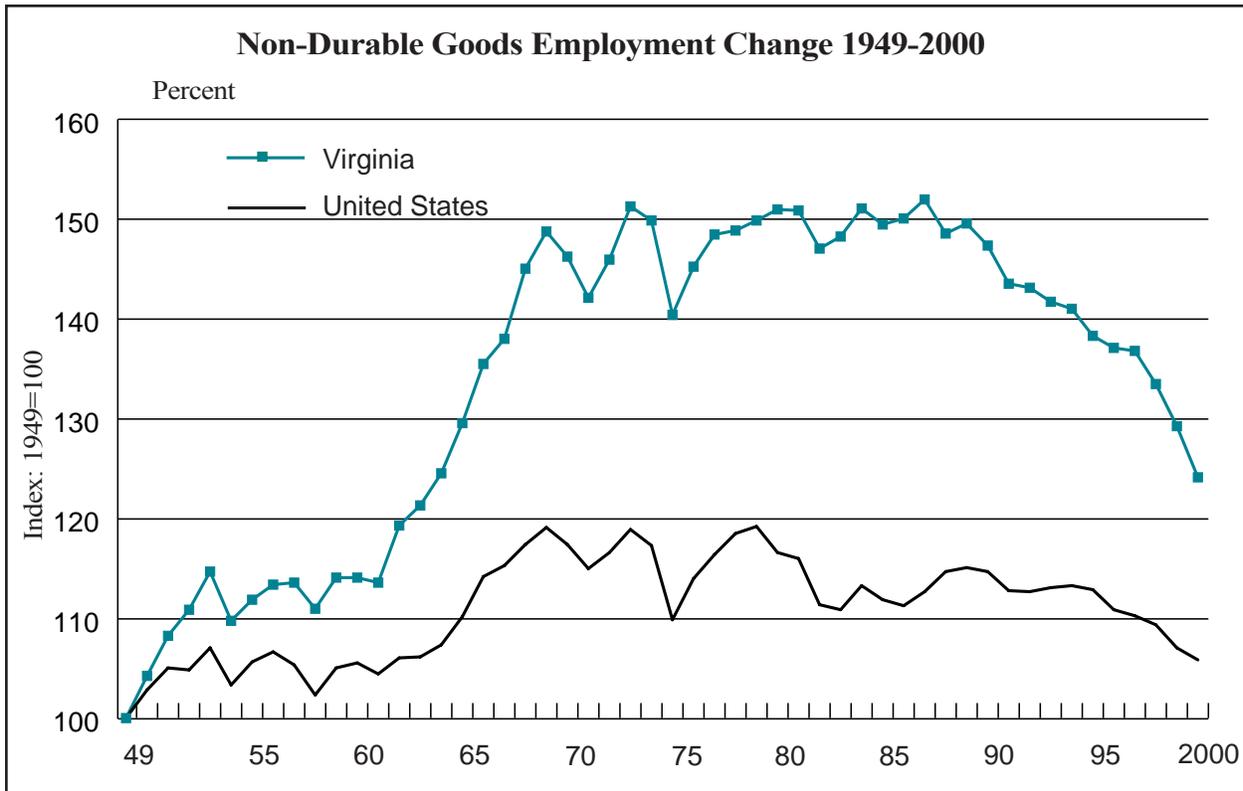
Long-Term Employment Trends



Source: U.S. Department of Labor, Bureau of Labor Statistics.

- Durable goods employment growth in Virginia has gone through three distinct phases:
  - ▲ 1949-1974: Durable goods grew 3.7 percent annually - its fastest growth rate from 1948 to 1998.
  - ▲ 1974-1990: Annual slowed considerably to 0.9 percent, less than one-fourth the rate for the preceding 25 years.
  - ▲ From 1990 to 2000 durable goods employment has experienced a 0.1 percent annual decline.

Long-Term Employment Trends



Source: U.S. Department of Labor, Bureau of Labor Statistics.

- Nondurable goods employment growth in Virginia has gone through three distinct phases of growth since 1949:
  - ▲ 1949-1969: Durable goods grew 2.0 percent annually - its fastest growth rate from 1949 to 1998.
  - ▲ 1969-1987: Growth slowed substantially to 0.1 percent annually.
  - ▲ 1987-2000: Durable goods employment **declined** 1.7 percent annually.

## Establishments

### Number of Establishments

	Virginia		U.S.	
	Establishments	Percent of Total	Establishments	Percent of Total
Manufacturing	6,908	100.0%	413,506	100.0
1. Printing & publishing	1,409	20.4	66,480	16.1
2. Lumber & wood products	1,329	19.2	39,741	9.6
3. Industrial machinery	779	11.3	63,165	15.3
4. Fabricated metal products	407	5.9	39,074	9.4
5. Food & kindred products	403	5.8	23,708	5.7
6. Stone, clay, & glass products	365	5.3	17,429	4.2
7. Electrical & electronic equipment	285	4.1	20,142	4.9
8. Apparel & other textile products	267	3.9	24,798	6.0
9. Furniture & fixtures	198	2.9	11,516	2.8
10. Miscellaneous manufacturers	180	2.6	18,790	4.5
Top Ten Total	5,622	81.4	324,834	78.5

Source: U.S. Department of Labor, Bureau of Labor Statistics.

- Three industries—printing, lumber, and industrial machinery—account for half of Virginia’s manufacturing establishments.
- The top 10 industries account for 79 percent of Virginia’s manufacturing establishments.
- The printing industry accounts for almost one out of every five manufacturing establishments in Virginia.

*Average Employment per Establishment*

	Virginia	U.S.
	Employment	Employment
Manufacturing	57	45
1. Tobacco products	420	191
2. Textile mill products	222	82
3. Transportation equipment	141	119
4. Primary metal products	133	91
5. Rubber & misc. plastics	120	58
6. Paper & allied products	119	88
7. Chemicals & allied products	112	70
8. Furniture & fixtures	111	48
9. Food & kindred products	98	71
10. Electrical & electronic equipment	94	83

Source: U.S. Department of Labor, Bureau of Labor Statistics.

**Payroll**

*Average Payroll per Employee*

	Virginia	U.S.	
	Payroll per Employee	Payroll per Employee	Virginia as % of U.S.
Manufacturing	\$35,767	\$41,941	85.3
1. Chemicals & allied products	52,653	61,979	85.0
2. Paper & allied products	45,887	44,339	103.5
3. Transportation equipment	43,702	51,581	84.7
4. Primary metal products	42,974	44,242	97.1
5. Instruments	42,375	33,589	78.7
6. Electrical & electronic equipment	40,785	49,620	82.2
7. Fabricated metal products	37,644	36,632	102.8
8. Printing & publishing	36,526	38,157	95.7
9. Industrial machinery	35,604	48,730	73.1
10. Rubber & misc. plastics	35,355	33,943	104.2

Source: U.S. Department of Labor, Bureau of Labor Statistics.

## Exports

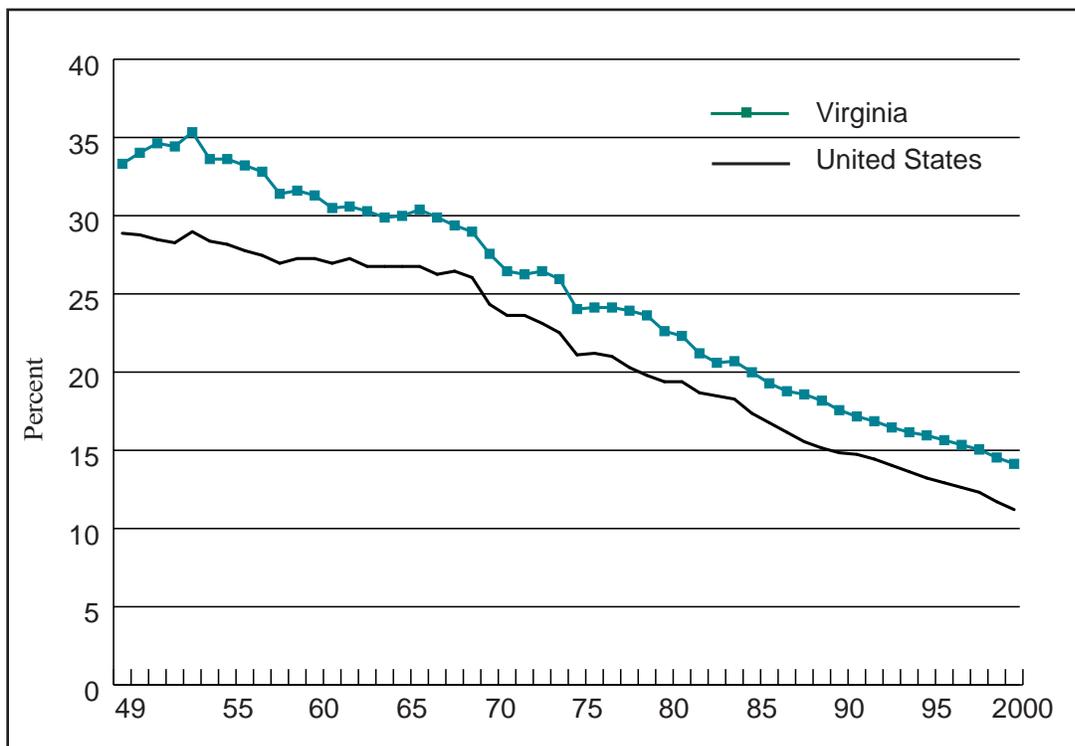
Virginia Exports			
	2000 (000)	1995 (000)	Percent Change 1995-2000
Manufacturing	\$9,396,000	\$9,294,000	1.1
Tobacco products	2,713,000	3,185,000	-14.8
Electrical & electronic equipment	1,394,000	652,000	113.8
Industrial machinery	1,043,000	1,008,000	3.5
Transportation equipment	919,000	989,000	-7.1
Chemical products	728,000	903,000	-19.4
Fabricated metal products	432,000	314,000	37.6
Rubber & plastic products	375,000	234,000	60.3
Scientific & measuring instruments	326,000	311,000	4.8
Paper products	191,000	182,000	4.9
Refined petroleum products	150,000	124,000	21.0
Top Ten Total	\$8,271,000	\$7,902,000	4.7

Source: U.S. Department of Commerce.

- The ten largest industries account for 88 percent of Virginia’s manufactured goods exports.
- The three largest exporting industries — tobacco manufactures, electric and electronic equipment, and industrial machinery — account for 55 percent of manufactured goods exports.
- Tobacco manufactures, primarily cigarettes, account for almost 30 percent of Virginia’s manufactured goods exports.

## Industry Importance

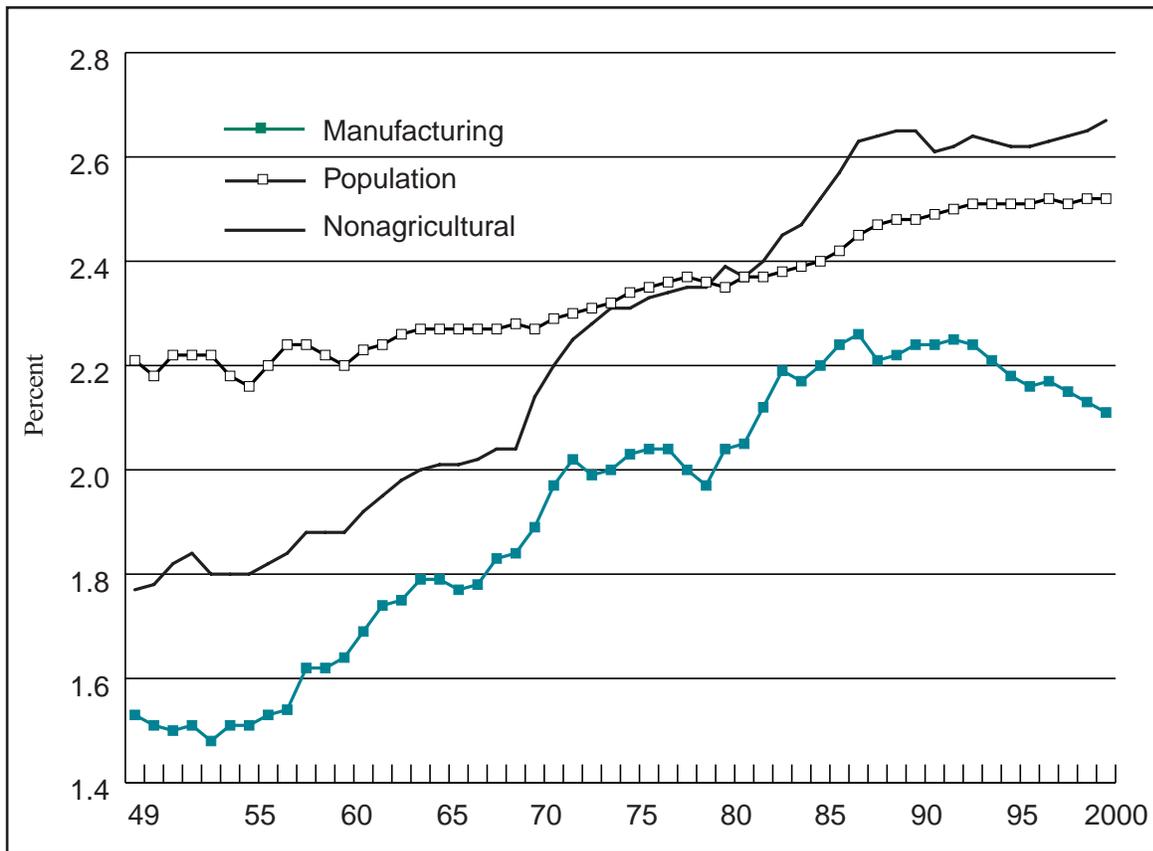
### Manufacturing's Share of Nonagricultural Employment



Source: U.S. Department of Labor, Bureau of Labor Statistics.

- Manufacturing's share of nonagricultural employment has been steadily declining for both Virginia and the U.S. during the past 50 years.
- The decline in manufacturing's relative share of nonagricultural employment was largely due to the faster growth of the nonmanufacturing employment until 1989. Since 1989, the absolute decline in manufacturing employment has accelerated the decline in manufacturing's share of nonagricultural employment.
- From 1949 to 2000, nonmanufacturing employment increased at an average 3.5 percent annual rate in Virginia compared with only 1.1 percent for manufacturing.
- For the U.S. nonmanufacturing employment during this period grew 2.7 percent annually versus 0.5 percent for manufacturing.

*Virginia's Share of National Manufacturing Employment, Nonagricultural Employment and Population*



Source: U.S. Department of Labor, Bureau of Labor Statistics.

- Before 1979 Virginia's share of the nation's population was greater than its share of nonagricultural employment. Since 1979 Virginia's share of the nation's nonagricultural employment has been greater than its share of population due to rapid nonagricultural employment growth.
- In 1949 Virginia's 2.21 percent share of the nation's population was 44 percent greater than its 1.53 percent share of the nation's manufacturing employment.
- In 1987 Virginia's share of population was only 8 percent greater than its share of manufacturing employment due largely to more rapid manufacturing growth.
- By 2000 the gap between Virginia's share of population and manufacturing employment had widened to 19 percent.